CSCAPE 2005: NOAA Ship *David Starr Jordan*
Weekly Science Report – Leg 2
4 August, 2005
Karin A. Forney – Cruise Leader

SCIENCE SUMMARY: 28 July – 03 August 2005

Well, we're off like a herd of turtles! After a 2-day delay in sailing because of some additional engine maintenance and repair work, we departed San Diego Monday, August 1 to continue the CSCAPE project aboard the *David Starr Jordan*. Our first destination was within swimming distance of the dock – across the harbor to a spot where we could calibrate our EK500 echosounder. This is important to allow us to interpret the acoustic backscatter signals, representing zooplankton and small fishes that are recorded throughout the cruise. The process involves several hours of painstaking maneuvering of a small metal sphere below the ship to obtain appropriate measurements, by oceanographers Paul Fiedler, Candice Hall, and Liz Zele. The rest of us used this time to conduct small boat training, reviewing safety procedures and practicing launching and driving the small boats. Chico even jumped into San Diego Bay to allow his trainees to practice recovering a man overboard – what dedication!

After dropping off Paul Fiedler that evening, we started our long trek WNW along the first transect line. This line takes us from coastal waters off San Diego to the outer edge of our study area, about 300nmi off Point Conception. Our first day's effort (8/2) led us past the north side of San Nicolas Island, where we encountered bottlenose and short-beaked common dolphins, blue and fin whales, and many California sea lions. We spent a couple hours working the blue and fin whales for photo IDs and biopsies, and our team returned with 3 biopsies from two blue whales, and 5 ID photos. The duplicate blue whale sample was processed to become our first cell culture sample for the 'Frozen Zoo' at the Center for Reproduction of Endangered Species (San Diego Wild Animal Park).

As we continued offshore on our second day out, sightings have dropped off, and winds have picked up slightly to about 15kts. But this is still good viewing for an area that routinely has 20-30kt winds. As expected, the species composition so far is markedly different than what we observed on our previous, northern legs aboard the *McArthur II.* We've seen warm-water dolphin species rather than the temperate dolphins and porpoises of our earlier legs, and there is a conspicuous absence of humpback whales, which were so common during legs 1a and 1b. Yesterday we encountered our first deep-water animals – some sperm whales. The small boat team approached them for photography and biopsies, finding several calves alone at the surface on their initial approach, with the older animals diving for 20-30 minutes. The adult whales proved evasive of the small boat, and we were only able to obtain one fluke photo and no biopsies, despite our best efforts.

Our final excitement for the first few days was an unusual seabird sighting – a beautiful bird and a first record for the northern hemisphere! I'll let Peter and Thomas tell you all about it in *Bird Buzz* below… So long, until next week! -K

Sightings and Effort Summary for Marine Mammals

Date	Start/Stop Time	Position	Total Distance	Avg. Beaufort
072805		IN PORT SAN DIEGO		
072905		IN PORT SAN DIEGO		
073005		IN PORT SAN DIEGO		
073105		IN PORT SAN DIEGO		
080105		EK500 CALIBRATION, DEPART SAN DIEGO		
080205	0644	N33:18.59 W119:14.35	56.7 nmi	2.9
	1943	N33:38.12 W120:42.19		
080305	0659	N33:55.85 W122:04.88	77.5 nm	3.9
	2000	N34:19.38 W123:39.01		

CODE	SPECIES	WEEKLY TOTAL#	CSCAPE TOTAL#
005	Unidentified common dolphin	1	1
017	Short-beaked common dolphin	8	9
018	Tursiops truncatus	4	4
021	Risso's dolphin	1	50
022	Pacific white-sided dolphin	-	87
027	northern right whale dolphin	-	25
037	killer whale	-	8
040	harbor porpoise	-	57
044	Dall's porpoise	-	127
046	sperm whale	1	5
049	ziphiid whale	-	1
051	Mesoplodon sp.	-	4
061	Ziphius cavirostris	-	2
069	gray whale	-	2
070	Balaenoptera sp.	-	3
071	Balaenoptera acutorostrata	-	7
074	Balaenoptera physalus	6	21
075	Balaenoptera musculus	3	30
076	humpback whale	-	358
077	unid. dolphin	4	34
078	unid. small whale	1	1
079	unid. large whale	-	26
096	unid. cetacean	-	2
	TOTAL	**29**	**864**

Note: Pinnipeds not included; mixed groups are counted once for each species.

Biopsies (Tim O'Toole, Gary Friedrichsen, Jason Larese, Laura Morse)

Species	Weekly	CSCAPE Total
Humpback whale	-	18
Blue whale	2	6
Fin whale	-	1
Sperm whale	-	11
Short-beaked common dolphin	1	1
Pacific white-sided dolphin	-	16
Northern right whale dolphin	-	6
Dall's porpoise	-	3
Killer whale	-	5
GRAND TOTAL	**3**	**67**

Photo-Project (Annie Douglas, Holly Fearnbach, Cornelia Oedekoven)

Leg 2 began well as we headed straight out into the deeper waters of the survey. Generally, there are fewer animals in the waters 100 to 200nm off of western North America, however, photographs of animals out here are harder to come by, and therefore very important to long term studies of cetaceans in the North Pacific Ocean. We have photographed from the *Jordan* and launched the RHIB twice over the last two days to obtain photographs of three groups of dolphins and seven individual whales, (four blue whales, one sperm whale and two fin whales). There are two species of common dolphins that we will encounter over this cruise, and interestingly many pigmentation variations among animals within species. We have photographed three schools of short-beaked common dolphins to look at color morphological differences within the species. Thanks to our birder Peter Pyle, we got a photograph of a melanistic short-beaked common dolphin that approached the bow of the Jordan for a ride.

Species	Weekly	CSCAPE Total
Humpback whale IDs	-	82
Blue whale IDs	4	24
Fin whale IDs	2	9
Sperm whale IDs	1	15
Killer whale IDs	-	53
Short-beaked common dolphins*	3	3
Bottlenose dolphins*	1	1
Northern right whale dolphins*	-	6
Pacific white-sided dolphins*	-	12
Risso's dolphins*	1	8
Dall's porpoise*	-	2

*number of groups photographed

Bird Buzz (Peter Pyle, Thomas Staudt)

It is not often that a new bird species for North America is encountered, and usually these are found in some far corner of the continent, such as the Aleutian Islands or Darian region of Panama. But offshore California has had its share of such records including, since 1994, Light-mantled Sooty Albatross, Dark-rumped Petrel, Great-winged Petrel, and Salvin's Albatross. To

be accepted by the officials (American Ornithologists' Union) new individuals must be thoroughly documented, with ironclad photographs if not specimens. For birds at sea, this can present a bit of a challenge.

At 1556 on 2 August we were cruising along about 23 nmi south of Santa Rosa Island when Holly spotted a medium-small seabird flying alongside the Jordan, out about 50 meters. Gary got on it and first shouted out that he had something interesting. Within an instant the six of us on the flying bridge, including Thomas, Tim, Cornelia, and myself, were looking at a bird that none of us recognized. Having learned a lesson with the two probable Kittlitz's Murrelets off Oregon last leg, I immediately dove off my chair for the project digital camera and 400 mm lens, fumbling to get it out of its pelican case and operate it (taking the lens cap off might help!). Luckily Cornelia, who knew the camera well, was right there to take over and zing off 44 images of the bird, as it cooperatively flew alongside the *Jordan*, crossed the bow within 75 meters, and sauntered off to the north.

Opening Harrison's *Field Guide to Seabirds*, we quickly identified what we had seen as a **Hornby's Storm-Petrel** (*Oceanodroma hornbyi*), a very distinctive but little known species that occurs in western South America and had not been previously recorded north of the Equator. It was a large storm-petrel with a long and forked tail, striking black patch on the head, a fine mosaic of grays, browns, and whites across its upperparts, and white underparts with a distinct brown band or "collar" across its chest. Within three hours (with the requisite assistance of ET Kim Belveal), two of the best images were cropped, edited, emailed off the *Jordan* to Pacific seabird guru Debi Shearwater, and posted on her website ShearwaterJourneys.com. We've come a ways in the documentation business since the days of the 12-gauge shotgun and 3-month lag time getting the specimen to a museum for proper identification.

I'm afraid that the rest of the bird news pales in comparison, although we've observed possible Stejneger's (Petrels, not beaked whales, Jim…) and Dark-rumped Petrels today, 200 miles off Point Conception. So we'll catch up on other bird news next report.

Oceanographic Operations (Candice Hall, Liz Zele)

With the decrease of sightings at the end of this report week comes an increase in oceanographic data! The slow start with a non-functional XBT computer was thankfully solved by our brilliant and persistent ET, Kim. Though we are still ironing out the many kinks, things are picking up for oceanography.

Date	CTDs	Bongo tows	XBTs	Comments
07/28 – 07/31				In port, San Diego
08/01	-	-	-	EK500 calibration
08/02	1	1	-	XBT computer hardware failure
08/03	2	1	3	